Roan Plateau Plan Amendment

Management Considerations for Proposed Areas of Critical Environmental Concern

Bureau of Land Management, Glenwood Springs Field Office
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I. Introduction

A. Legal Authority

Section 202(c)(3) of the Federal Land Policy and Management Act (FLPMA) mandates that the Secretary of the Interior (through the Bureau of Land Management [BLM]) "give priority to the designation and protection of areas of critical environmental concern…[in] the development and revision of land use plans." These are defined in Section 103(a) as "areas within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards."

BLM has jurisdiction over both Federal surface and Federal mineral estates. In instances of split estates (e.g., private surface with Federal subsurface), BLM manages only those lands where it has jurisdiction.

When resource values are identified on a surface estate, they may be affected by BLM's management of the underlying Federal subsurface estate. BLM is not making any decisions for, or asserting any authority over, private surface estates.

B. Relevance and Importance Criteria

The staff of BLM's Glenwood Springs Field Office (GSFO) examined the natural, scenic, and geologic values within the Roan Plateau Planning Area and determined which values met the criteria for designation as Areas of Critical Environmental Concern (ACECs)(*Roan Plateau RMP Amendment: Evaluation of Proposed Areas of Critical Environmental Concern*, BLM, GSFO, 2002). Of the ten areas originally considered for potential designation as ACECs, four were determined to possess values that met the criteria of relevance and importance and that warranted the special management represented by an ACEC designation: the Anvil Points area, the Magpie Gulch area, a portion of the East Fork of Parachute Creek, and a portion of Trapper and Northwater Creeks (Table 1). These areas will be considered for ACEC designation during the Roan Plateau Resource Management Plan (RMP) Amendment process.

Table 1.
Proposed Areas of Critical Environmental Concern
with Values Found to Meet Relevance and Importance Criteria

Proposed ACEC	Value			
Anvil Points	Visual	Geological	Wildlife	Botanical/Ecological
Magpie Gulch	Visual		Wildlife	Botanical/Ecological
East Fork Parachute Creek	Visual		Fish/Wildlife	Botanical/Ecological
Trapper Creek			Fish/Wildlife	Botanical/Ecological

C. Development of Management Prescriptions

Section 1613.22 of the BLM Manual directs development of management prescriptions for each potential ACEC. These management prescriptions are to be developed to protect or enhance the values for which the ACEC was defined, considering the specific goals of each alternative. These specific actions may define the role and location of ACECs in each of the RMP alternatives and the relationship of each ACEC to other resource values. The actions also determine the management actions that should be applied.

The purpose of this document is to identify possible management prescriptions available to manage the significant values within each proposed ACEC. Management prescriptions may vary by alternative in order to be compatible

with the goals of the alternative. This variation may be demonstrated by the degree or intensity of management attention afforded the ACEC, by changes in the size of the area to receive special management attention, or by the term of special management attention. As the alternatives are developed and modified to include a variety of resource uses, the prescriptions proposed in this report may be modified to reflect a variety of other resource uses.

D. Limitations of the Proposed Management Prescriptions

The management prescriptions in this report focus only on the relevant and important values for each ACEC (BLM, GSFO, 2002) and consider only specific actions that may "protect and prevent irreparable damage" to these values, as per Section 1613 of the BLM Manual. These prescriptions are presented as a range of actions that represent neither the highest nor the lowest possible levels of management or protection for these values. Rather, these prescriptions are intended to serve as a starting point for discussion and impact analysis, and are proposed with the understanding that they may be modified during the alternatives development process in order to meet specific objectives of one or more alternatives. It is also understood that the prescriptions presented in this document, as well as any developed subsequently in the alternatives, will be analyzed for environmental impacts. The analysis may conclude that an alternative results in unacceptable, acceptable, or no impacts to relevant and important values.

A variety of other management measures may be applied to other resource concerns in these areas as alternatives are developed in the Resource Management Plan/Environmental Impact Statement (RMP/EIS) process. These additional measures, such as restrictions for steep slopes or allowances for right-of-way (ROW) corridors, do not appear in this document, because they are not directly linked to relevant and important values. Final management of proposed ACECs will reflect all prescriptive measures deemed appropriate for protection of relevant and important values, as well as those for other resources contained within the alternatives developed during the EIS/RMP process.

II. Factors Influencing Management Prescriptions

BLM was guided by a number of factors in the development of management prescriptions. Section 1613.2.22 of the BLM Manual lists eight factors to be included, but to which discussion need not be limited. These factors were considered in assessment of needed management prescriptions. Specific factors as they apply to each proposed ACEC will be discussed in detail under the appropriate section for each ACEC.

A. Conditions or Trends of the Potential ACEC

What is the current condition of the resource or hazard involved? What is the trend in its condition? Can degradation be stopped? Is it reversible? What is the capability of the resource or hazard in terms of the level and type of use it can sustain without risk or threat?

B. Relationship to Other Resources or Activities

What measures can be taken to reduce the adverse effects of other resource uses on the potential ACEC? Are resource uses contributing to the degradation of, or threatening the existence of, the important and relevant values? What land and resource uses would be compatible and under what conditions should they be conducted or permitted in order to protect the relevant and important values? What uses or actions would not be compatible with protection of the identified values even when conditioned? Considering the objectives of the RMP alternatives, do the values of other resources outweigh the need for protection of the important and relevant values?

C. Opportunities for Protection and/or Restoration of Potential ACEC Values

What measures can be taken to protect the potential ACEC value(s) without restricting other resource uses? Is it feasible to protect the resource value(s) or reduce or minimize threats from hazards?

D. Wisdom of Highlighting the Resource

Is it wise to highlight the potential ACEC? Will highlighting achieve some management objective or enhance the area's value? Or will increased public awareness of the area accelerate its degradation?

E. Boundary Review

The boundary of a prospective ACEC is closely reviewed. This review examines adjacent or nearby public lands and considers likely management requirements and their feasibility. Appropriate adjustments are identified. When a prospective ACEC is located in close proximity to another prospective ACEC, consideration is given to consolidation during boundary review. In some situations, a combination of different kinds of prospective ACEC values may add to the importance of the area as a whole and influence boundary locations.

F. Relationship to Non-BLM Designations

Is the potential ACEC included in an area recommended for designation (or already designated), e.g., a Wild and Scenic River? Will (or does) management under the other designation afford sufficient protection of potential ACEC values?

G. Opportunities for Management by another Agency

Are there, in terms of the public interest, any other public agencies, or private organizations that could manage the resource value(s) associated with the potential ACEC more effectively than the BLM? Is it appropriate to consider the transfer of the potential ACEC to another Federal, State, or local agency?

H. Relationship to Existing Rights

What is the status of existing mining claims or pre-FLPMA leases? How will existing rights affect management of the resource or hazard?

The proposed ACECs do not currently include non-BLM designations that would affect their management. Also, all lands being considered can be appropriately managed by BLM; most of those lands have been transferred by Congress to BLM for management consistent with FLPMA. Therefore, factors F and G listed above will not be discussed further. ACEC designation is not being proposed for private surface or subsurface estate. Only Federal surface estates managed by BLM would be managed as ACECs.

III. Manuals, Handbooks, and Policies Common to All ACECs

The following BLM policies provide guidance for the development of management prescriptions for the proposed ACECs, specifically in this instance for resources that constitute relevant and important values. Specific guidance as it applies to each proposed ACEC will be discussed in detail under the appropriate section for each ACEC.

A. Sensitive Species Policy

Guidance on BLM's management of Sensitive Species is found in Section 6840 of the BLM Manual. Sensitive Species are those (1) under status review by the Fish and Wildlife Service (FWS)/National Marine Fisheries Service (NMFS); (2) whose numbers are declining so rapidly that Federal listing may become necessary; (3) with typically small and widely dispersed populations, or (4) inhabiting ecological refugia or other specialized or unique habitats. BLM's Sensitive Species Policy directs the agency to ensure that no action requiring Federal approval contributes to the need to list a species as Threatened or Endangered pursuant to the Endangered Species Act of 1973. This means that no actions that are funded, authorized, or carried out by the BLM should contribute to the species becoming listed as a Candidate species, or the need to list any Candidate species as Threatened or Endangered.

Management and guidance for eagles is found in the Bald and Golden Eagle Protection Act of 1940, United States Code 16, Section 668, parts a-d. Management and guidance for other raptors, as well as all native bird species, is found in the Migratory Bird Treaty Act of 1918, United States Code 16, Sections 703-712, Chapter 128.

B. Wilderness Study Area Interim Management Policy

If all or a portion of any ACEC is also designated as a Wilderness Study Area (WSA) by BLM, management would conform to whichever policy is most restrictive in protecting the resource values. WSAs are managed under BLM Handbook H-8550-1, *Interim Management Policy for Lands under Wilderness Review,* until such time as Congress decides to designate the area as wilderness or release the area for other uses.

ACECs are proposed to protect and manage values determined to be relevant and important. WSAs are proposed to protect wilderness character. ACEC values are not wilderness values, although ACECs maybe proposed/designated within WSAs or designated wilderness. The ACEC recommendations contained in this document do not, and are not intended to, serve as a substitute for WSA designation.

C. Visual Resource Management

Visual resources are managed as discussed in BLM manuals (BLM 8400), handbooks (H-8410-1, H-8431-1) and memoranda (WO-IM-2000-096, WO-IB-98-135).

D. Cave Resource Protection

Management and guidance for caves is found in the Federal Cave Protection Act of 1988, United States Code, 16USC Sec. 4301, Title 16, Chapter 63, and in 43 CFR, Subtitle A, Part 37. Additional guidance relating to caves can be found in BLM Handbooks H-8380 and H-8270-1.

E. Land Tenure Adjustments

Land Acquisitions would be considered or actively pursued if they would protect or enhance the relevant and important values within the ACEC or protect additional occupied habitat for the relevant and important values. Lands included in ACECs would not be available for disposal.

IV. Possible Management Prescriptions by Proposed ACEC

A. Anvil Points Proposed ACEC

For additional information on physical description or values, please refer to the *Roan Plateau RMP Amendment: Evaluation of Proposed Areas of Critical Environmental Concern* (BLM, GSFO, 2002).

1. Physical Description

The proposed Anvil Points ACEC includes 10,226 acres along the southeastern portion of the Roan Plateau, north of Rulison. The dominant feature of this proposed ACEC is the barren white cliffs along the southern rim of the Roan Plateau. The proposed ACEC also encompasses narrow grasslands and mesic aspen forests above the cliffs and a series of ridges and ravines at the base of the cliffs. The elevations of the proposed ACEC range from 5,277 feet to 9,286 feet.

2. Values

2.1. Visual Resources

Anvil Points ACEC contains significant scenic values that meet the relevance criteria [BLM 1613.1.11.A(1)]. The area also meets the importance criteria [BLM 1613.1.11.B(1) and (3)] in that the area represents a significant visual feature in the landscape which is both locally and regionally important.

2.2. Geological Features

The Anvil Points ACEC meets the relevance criteria for rare geologic features [BLM 1613.1.11.A(3)] because it contains a significant cave system. The ACEC also meets the importance criteria [BLM 1613.1.11.B(1) and (2)], as the cave system is regionally significant and has qualities that make it unique and fragile.

2.3. Wildlife Resources

This area meets the relevance criteria for wildlife resources [BLM 1613.1.11.A(2)] because it contains crucial habitat for the peregrine falcon (*Falco peregrinus*), golden eagle (*Aquila chrysaetos*), and Townsend's big-eared bat (*Corynorhinus townsendii*), a BLM Sensitive Species. In addition, the lands below the rim contain unroaded, unfragmented habitats that are rare within the planning area. The unroaded nature of these lands provides areas of solitude for a variety of wildlife species. This area also meets the importance criteria [BLM 1613.1.11.B.(1) and (2)], since the wildlife values have more than locally significant qualities. The high-quality nesting habitat provided by the Roan Cliffs is regionally distinct and important for these protected bird species. In addition, the unroaded lands within the proposed ACEC are increasingly rare within the region and are highly vulnerable to adverse change.

2.4. Botanical/Ecological Processes

This area meets the relevance criteria for botanical resources and natural processes or systems [BLM 1613.1.11.A (3)]. The area contains two Federal Candidate and two BLM Sensitive Species that are globally and regionally rare, including a significant percentage of the world's population of Parachute penstemon and southwest stickleaf. The site also protects four plant communities that have been identified as being rare or uncommon nationally and/or within the state. The area meets the importance criteria [1613.1.11.B (1) & (2)] because the values are regionally or nationally significant, irreplaceable, and vulnerable to adverse change.

3. Influencing Factors

3.1. Visual Resources

3.1.1. Conditions or Trends of the Potential ACEC. The proposed Anvil Points ACEC encompasses a prominent backdrop for the communities of Parachute, Battlement Mesa, Rifle, and Silt and to travelers on Interstate 70. The topographic relief is considerable, with the skyline rising three to four thousand feet above the valley floor. The stark contrast of the vertical outcrops of the shale-bearing Green River and Wasatch formations to the heavily vegetated slopes accentuates its rugged and scenic qualities. The steep topography and rugged nature of these units has kept the area's visual integrity and scenic qualities intact. This proposed ACEC unit contains lands that have been identified as high and very high visual sensitivity areas. These consist of lands that are on slopes over 30 percent within the viewshed of I-70 (Map 1).

Portions of the lower lands in the Anvil Points unit have incurred some visual degradation due to commercial activities. Modifications to the landscape are occurring now and are expected to continue into the future, due to the on-going oil and gas activities in leased areas within the proposed ACEC. To date, modifications in the landscape have met the current VRM Class II objectives (Appendix A) due to topography, and the ability to hide or screen disturbances.

Decreased visual quality is a trend in the general area. Increased activities on both public and adjacent private lands create an inherent potential for degradation to visual resources. Scenic areas are vulnerable to fragmentation due to management activities. This fragmentation results in the loss of large, intact open spaces, natural landscapes, and subsequently, scenic values.

3.1.2. Relationship to Other Resources or Activities. Many resource uses have the potential to degrade visual and scenic qualities found in the unit, although development of other resources will likely be limited as most of the unit consists of steep slopes, which precludes many management activities.

Protective measures could be implemented to reduce adverse effects and fragmentation to visual and scenic values. These should include preventing any new long-term disturbances that disrupt visual integrity, such as linear disturbances and changes to the color, form, and texture of the landscape. Different relevant and important values identified in some of the ACECs may share or benefit from similar management prescriptions or needed protective stipulations.

3.1.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. Protection and enhancement of the visual values in the Anvil Point ACEC is feasible and probably would be highly

successful due to current conditions of the resource and the status of land use allocations currently in place. Portions of the Anvil Points unit contain existing leases with stipulations attached that minimize or reduce threats to visual resources on leased lands. The ACEC contains limited ROWs.

Current stipulations provide protective measures (Controlled Surface Use stipulation CSU 5)(Appendix A) designed to accomplish VRM Class II objectives on 4,460 acres in this proposed ACEC. These measures also protect 4,395 acres in the I-70 viewshed on slopes over 30 percent (No Surface Occupancy stipulation NSO 18)(Appendix A). The VRM Class II objective "retains" the existing characteristic landscape and allows for limited changes in the landscape due to management activities, which should be low and not evident to the casual observer. However, VRM Class II objectives do not provide for "preservation" of the existing landscape, which focuses on natural ecological changes. Additional protective measures will provide for visual integrity for the proposed ACEC unit as a whole on a landscape scale.

3.1.4. Wisdom of Highlighting the Resource. The visual resource is already highlighted in the Anvil Points ACEC as it serves as the scenic backdrop in the landscape for several adjacent communities and major transportation corridors. The management objective and resulting proposed stipulations should enhance and protect the identified values. The public has indicated a high level of awareness and concern over visual values. Increased public awareness may create a demand for preservation and retention of the visual values as an integral part of the social and economic character of these communities. It is unlikely that increased public awareness will result in further or increased degradation of resource values.

3.1.5. Boundary Review. Scoping, and public comments to date, cite few resource conflicts with visual resources. This may indicate support for preservation of visual resource values as well as a lack of management conflicts due to the steep topography and unroaded nature of this area. This area receives little human use.

Approximately 2,500 acres within the proposed Anvil Points ACEC have been leased for oil and gas following the 1999 Oil and Gas Supplemental Environmental Impact Statement (SEIS). Some protective stipulations were applied to visual, botanical, and wildlife values; however, these applied only to oil and gas leasing and some of the stipulations may be inadequate to fully protect the resource values. These lands are included in the proposed ACEC with management prescriptions that apply to all uses and activities. New stipulations would not apply to pre-existing leases.

High and very high visual sensitivity areas to the west of the proposed boundary were not included in this ACEC (Map 1). A large portion of these lands has been leased and is currently being managed, or is proposed to managed, as VRM Class II, which has current protective stipulations attached (CSU 5) from the 1999 Oil and Gas SEIS that will preserve the existing landscape. Portions of these lands also have current protective stipulations, for high sensitivity areas in the Interstate 70 viewshed (NSO 18).

3.1.6. Relationship to Existing Rights. The Anvil Points ACEC includes no existing mining claims or pre-FLPMA mineral leases. Existing oil and gas leases are shown on Map 2. Existing leases include approximately 2,500 acres within the proposed ACEC. Protective stipulations were applied but may not fully protect the resource values. ACEC management prescriptions would apply to all uses and activities; however, new stipulations would not apply to pre-existing leases

3.2. Geologic Features

3.2.1. Conditions or Trends of the Potential ACEC. The Anvil Points claystone cave and karst system is a unique and fragile resource and has been noted to be one of the longest verified caves of this type in the world. The current condition of the cave has been maintained throughout the years. The cave system is intact and has limited signs of use, most dating back from early recreational users, as noted by the presence of graffiti at the cave dating to 1947. Research has shown that recreational use and graffiti started with residents and employees from the nearby Anvil Points experimental station.

Its fragile and unique qualities and its location among current oil and gas activity also make it vulnerable to adverse change. The complex itself poses management concern regarding public safety as it relates to potential collapses due to drilling and/or seismic activity.

3.2.2. Relationship to Other Resources or Activities. Management prescriptions for geologic resources and protective measures needed to prevent adverse effects of other resource uses are identified for each ACEC and are described in more detail below under Section 4, Management Prescription. Many resource uses have the potential to degrade and threaten the existence of the cave and karst system found in the proposed Anvil Points ACEC. Human health and safety concerns are also important considerations for the management of the cave resource.

3.2.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. An opportunity to protect and enhance the cave values in the Anvil Point ACEC is feasible and would likely be highly successful due to current conditions of the resource, human health and safety concerns, and the status of land use allocation currently in place. With the Roan Plateau land use plan currently underway, reasonable measures necessary to protect human health and safety and prevent degradation of this significant resource value can be integrated and evaluated within the planning process.

The proposed Anvil Points ACEC includes limited ROWs and some existing leases. These leases have NSO stipulations attached under the 1999 Oil and Gas SEIS that will protect the Anvil Points cave and karst system. However, these stipulations are to protect the cave resources against ground-disturbing activities such as oil and gas drilling and do not provide for protective stipulations for other resource uses and/or reduce or minimize safety concerns.

3.2.4. Wisdom of Highlighting the Resource. The management objective and resulting proposed stipulations should enhance and protect the identified resource value and address the human health and safety concerns. However, there is concern about highlighting this geologic resource within this ACEC. Increased visits could have a negative effect to the resource values and could increase human health and safety concerns.

Information concerning the specific location of the cave system will not be made available to the public under section 522 of title 5, United States Code, and as stated under 43 CFR, Part 37. Additionally, the cave is under consideration to be listed as part of this planning process as per the Federal Cave Protection Act of 1988.

3.2.5. Boundary Review. In order to protect the Anvil Points cave and karst system, stipulations must provide protective measures for ground-disturbing activities, both surface and sub-surface, within one-quarter mile of the identified values (Map 1). In addition, protective measures must be incorporated to provide for human health and safety concerns.

3.2.6. Relationship to Existing Rights. The Anvil Points Cave area was leased subsequent to the 1999 Oil and Gas SEIS. This lease has an NSO stipulation attached under the 1999 Oil and Gas SEIS that will provide for protection to the scientific and wildlife values provided by the caves. This stipulation is to avoid difficulties inherent in drilling such locations; no surface occupancy is permitted in the area encompassing the cave openings, sub-surface features, and the watersheds immediately above the caves. However, any new stipulations developed under the ACEC would not apply to pre-existing leases.

3.3. Wildlife Resources

3.3.1 Conditions or Trends of the Potential ACEC. The majority of the lands located within the proposed boundary are steep and rugged. Topography and a lack of roads limit access, which results in limited human use of the area. The majority of human use occurs by non-motorized means during the big game hunting seasons in the fall. Livestock grazing is limited due to topography. Wildlife habitats are diverse and vary from the steep shale cliffs to small patches of Douglas-fir, mixed mountain shrublands, pinyon-juniper woodlands, sagebrush benches, and limited riparian areas. The area contains high-quality nesting habitat for peregrine falcons and golden eagles and crucial habitat for Townsend's big-eared bat.

Human activity is much greater on adjacent lands and includes a variety of activities such as livestock grazing, off-highway vehicle (OHV) use, oil and gas production, and various primary and ancillary commercial and residential developments.

3.3.2. Relationship to Other Resources or Activities. Many resource uses have the potential to degrade wildlife values found within the proposed ACEC. Different relevant and important values identified in some of the ACECs may share or benefit from similar management prescriptions or needed protective stipulations. Under certain alternatives, other resource values may outweigh the need for full protection of the important and relevant values. This is addressed through designating (or not designating) proposed ACECs, size adjustments to ACECs, and by changes in proposed management prescriptions and stipulations for the various alternatives.

3.3.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. Proposed management prescriptions are identified with the intent of protecting relevant and important wildlife values. Portions of the area may be adequately protected due to the steep and rugged nature of various habitats, particularly within the cliffs. However, as human technologies advance, certain activities may threaten these values if no constraints are in place to protect them.

The current unroaded and rugged nature of the area has resulted in limited identification of restorative prescriptions. However, the exclusion of natural fire disturbance has resulted in poorer-than-desired conditions in some habitats. It is possible that prescriptive treatments could enhance wildlife habitat values. A combination of protection of current values and improvement of habitats to desired condition would optimize wildlife values in the proposed Anvil Points ACEC.

3.3.4. Wisdom of Highlighting the Resource. There is little concern with regard to highlighting the wildlife values found within this proposed ACEC. Given the current unroaded nature of the area, limited human use occurs. If protected by proposed stipulations, significant increases in use are not expected to occur. Slight increases in human use may occur naturally, despite proposed stipulations, due to increases in human populations and ever-increasing demands for recreation on public lands. Given the topography, proposed stipulations, and type of use anticipated, highlighting the resource is not expected to impair identified values.

3.3.5. Boundary Review. A substantial portion of the area encompassed by the proposed Anvil Points ACEC has relevant and important value related to wildlife (Map 1). These lands occur on the cliff face and the unroaded, unfragmented portions of the lands below the cliffs. The proposed boundary encompasses the identified values. The proposed boundary for the ACEC is believed to be the smallest size necessary to protect fully the combined resource values (wildlife, geological, visual, and botanical).

3.3.6. Relationship to Existing Rights. Approximately 2,500 acres within the proposed Anvil Points ACEC have been leased for oil and gas following the 1999 Oil and Gas SEIS. Some protective stipulations were applied to visual, botanical, and wildlife values; however, these applied only to oil and gas leasing and some of the stipulations may be inadequate to protect resource values fully. These lands are included in the proposed ACEC with management prescriptions that apply to all uses and activities. New stipulations would not apply to pre-existing leases.

Livestock grazing is an existing use and the proposed ACEC does not preclude this activity. Livestock grazing is limited in the area due mainly to topography, and no conflicts have been identified.

3.4. Botanical/Ecological Processes

3.4.1. Conditions or Trends of the Potential ACEC. The ACEC evaluation process determined that four plant species and four plant communities met relevance and importance criteria within the proposed Anvil Points ACEC (BLM, GSFO, 2002). These values are listed and described in Table 2, and their distributions are presented in Map 1.

Table 2.
Rare Plant Species and Significant or Rare Plant Communities within the Proposed Anvil Points ACEC
Common names and binomial synonomies are included in parentheses.
Colorado Natural Heritage Program (CNHP) ranking criteria are provided in Appendix B.

Common name	Scientific Name	Agency Status	CNHP Rank	Notes
Species				
Parachute penstemon	*Penstemon debilis*	Federal Candidate (C)	G1/S1	Colorado endemic – Restricted to the Green River Formation
Debeque phacelia	*Phacelia submutica (Phacelia scopulina* var. *submutica)*	Federal Candidate (C)	G4T2/S2	Colorado endemic – Restricted to the Wasatch Formation
Southwest (Arapien) stickleaf	*Nuttallia (Mentzelia) argillosa (Mentzelia rhizomata)*	BLM Sensitive	G3/S2	Restricted to the Green River Formation
Debeque milkvetch	*Astragalus debequaeus*	BLM Sensitive	G2/S2	Colorado endemic – Restricted to the Wasatch Formation
Utah fescue	*Festuca (Argillochloa) dasyclada*	Formerly BLM Sensitive	G3/S3	Restricted to the Green River Formation
Communities				
Beardless bluebunch wheatgrass community	*Pseudoroegneria spicata (Agropyron spicatum)* ssp. *inermis*		G2?/S2?	Three locations in Colorado
Beardless bluebunch wheatgrass/Sandberg bluegrass community	*Pseudoroegneria spicata (Agropyron spicatum)* ssp. *inermis/Poa secunda*		G4/S1	
Quaking aspen/ Rocky Mountain maple	*Populus tremuloides/Acer glabrum*		G1G2/S1S2	Few locations in Colorado
Mountain big sagebrush/ basin wildrye	*Artemisia tridentata* ssp. *vaseyana (Seraphidium vaseyanum*/L*eymus (Elymus) cinereus*		G4/S2	Limited in Colorado

All four plant species are considered endemic. The DeBeque phacelia and DeBeque milkvetch are restricted to the Wasatch formation. The Parachute penstemon and southwest stickleaf occur on Green River shales (Spackman *et. al*. 1997). The populations within the proposed ACEC constitute a large component of the overall range for three of the four plant species. In the extreme, two of the five known occurrences of Parachute penstemon occur within the proposed Anvil Points ACEC. Populations of all four species are considered to occur at the eastern-most extent of their known range within the proposed ACEC. In addition, Utah fescue, an upland grass, is found in three locations in the proposed ACEC. This species was formerly considered a BLM Sensitive Species and is restricted to Green River shales in the Piceance Basin and a small area in Utah (Weber and Wittmann 2001).

Little is known about these species' life history characteristics, additional habitat requirements, pollinator species, dispersal mechanisms, or other factors pertinent to determining their status and trends. In general, the habitat where these species occur appears to be in good condition and with few exceptions, described below, the populations appear to be healthy and self-sustaining.

One of the two Parachute penstemon populations within the proposed Anvil Points ACEC is quite small and appears to have been decreasing in size for the last decade (Scheck 2002). There is no evidence that this decline is due to human-caused factors. The second, larger Parachute penstemon population occurs near Anvil Points Mine Road. Proximity to the road puts this population at increased risk of noxious weed infestation or damage by foot traffic or off-road vehicle use.

Four plant communities within the proposed Anvil Points ACEC are considered to be rare or imperiled by the Colorado Natural Heritage Program (CNHP 1997)(Table 2). Two of these are grasslands which occupy the ridgelines and south-facing slopes at the head of the East Fork of Parachute Creek and its eastern tributaries. These communities are rare in Colorado. It is believed this may be due to heavy grazing pressures throughout much of their historical natural range (Baker 1983). The beardless bluebunch wheatgrass community is known to occur in only three locations in Colorado (CNHP 1997). These grasslands are currently in good condition (CNHP 1997) and are subject to only light grazing pressure at this time because of restricted water availability. Several roads dissect these grassland communities, causing fragmentation.

The other two rare plant communities within the proposed Anvil Points ACEC are shrublands. Aspen and Rocky Mountain maple are both relatively common mountain species. They rarely co-occur to form communities, as they do in two 40-acre stands within the proposed Anvil Points ACEC. This community type is found in only a few scattered locations in Colorado (CNHP 1997). Both areas appear to be in good health. The dominant species are regenerating and the understory is diverse and productive. Some roads in the vicinity of this woodland community could increase the risk of noxious weed introductions.

Mountain big sagebrush and basin wildrye form an unusual assemblage adjacent to the aspen/Rocky Mountain maple communities. Within Colorado, this community type is limited to the northwest corner of the state. It depends on moist, but not saturated, deep soils along a narrow elevation band from 7,500 to 8,800 feet (Johnston 1987). This community appears to be stable and self-sustaining. Some roads in the vicinity of this shrubland community could increase the risk of noxious weed introductions.

Occupied and potential habitat for these plant species and communities is delineated on Map 1. It should be noted that the area delineated as "potential habitat" is considered to be only the highest quality potential habitat and that total potential habitat is far more extensive.

3.4.2. Relationship to Other Resources or Activities. All four of the rare plant species that occur within the proposed Anvil Points ACEC are considered endemic and restricted to limited areas by specific substrate requirements in addition to other specific, often uncommon, habitat requirements. Endemism and limited available habitat make these species particularly susceptible to any activity which causes surface disturbance, degrades the quality of the habitat, or introduces negative influences, such as noxious weeds. These would include structures, or any other source of surface disturbance such as roads, trails, and off-road traffic, as well as any off-site or up-slope activity that would result in surface disturbance, degradation, or introduction of negative influences to the habitat.

Some existing surface disturbance appears to occur at levels that do not negatively impact the rare or sensitive plant communities within the proposed Anvil Points ACEC. The two rare grassland communities represented in this ACEC are thought to have been adversely affected by livestock grazing throughout their natural range to such a degree that they only occur where they are protected from such pressure (Baker 1983). Maintaining or removing the light grazing intensity that these areas currently support will allow for continuing protection of these communities in the proposed Anvil Points ACEC.

Several roads dissect these grassland communities, causing fragmentation, which has the potential to interfere with natural ecosystem processes (Harris and Silvea-Lopez 1992) and as well as increase the risk of noxious weed introductions.

The quaking aspen/Rocky Mountain maple woodland and sagebrush/wildrye shrubland communities currently support little livestock grazing due to inaccessibility and limited available water. However,

increasing grazing intensity would risk physical degradation of the habitat as well as increase opportunities for noxious weed establishment.

Existing roads through, and adjacent to, these woodland and shrubland communities do not appear to affect the areas adversely. However, increased use of these roads would contribute to habitat fragmentation in these areas as well as increase the risk of introducing noxious weeds.

3.4.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. Generally promoting native plant species and communities as well as natural systems and processes would protect and restore botanical and ecological values within the proposed Anvil Points ACEC. Specific opportunities would include protecting the occupied and potential habitat of rare plants and plant communities from ground-disturbing activities to reduce the potential for negative impacts to these resources, as well as revegetating areas of surface disturbance with locally adapted native plant species.

Both rare grassland communities are currently fragmented by roads. Closure and revegetation of some of these roads would integrate these unusual communities and reduce their risk of invasion by noxious weeds.

Conducting ongoing, systematic monitoring for, and timely control of, noxious weeds is important to any healthy and well-functioning vegetation resource. Timely and thorough project monitoring will ensure that sensitive botanical and ecological values are protected and management prescriptions are achieved.

3.4.4. Wisdom of Highlighting the Resource. Increasing public awareness of rare plants and plant communities in a general sense may create and promote an understanding of their value and unique management requirements. However, given the susceptibility of these resources to disturbance, the precise location of these species and communities should not be highly publicized to prevent degradation of the resources and their habitats by increased visitation.

3.4.5. Boundary Review. The boundary for the proposed Anvil Points ACEC includes the entire known occupied habitat, and a portion of the highest potential habitat, for the rare plants and plant communities. However, many of the botanical resources occur at the top of the cliffs and at the northern edge of the proposed ACEC. Because of this, several resources occur less than one-quarter mile from the ACEC boundary. This is important, because these resources should be protected from surface disturbance within one-quarter mile of their occurrence or potential habitat within the proposed ACEC. The location of the boundary would not allow this protection in these specific areas. This may not be an issue, as the proposed Anvil Points ACEC is contiguous with the proposed East Fork Parachute Creek ACEC boundary. If the same management prescriptions are used for both ACEC areas, these resources would remain protected.

3.5.6. Relationship to Existing Rights. The proposed ACEC contains no existing mining claims or pre-FLPMA mineral leases. Existing oil and gas leases include approximately 2,500 acres within the proposed Anvil Points ACEC (Map 2). Protective stipulations were applied but may not fully protect the resource values in this area. Proposed ACEC management prescriptions would apply to all uses and activities; however, new stipulations would not apply to pre-existing leases

Livestock grazing is an existing use, not precluded from the ACEC. Livestock grazing has the potential to negatively affect rare plants and rare plant communities. However, livestock is limited in the area due mainly to topography and lack of available water.

4. Management Prescriptions – Proposed Anvil Points ACEC

All authorized actions will include a monitoring and compliance plan specifically addressing the relevant and important values within the proposed ACEC. A range of possible management prescriptions is outlined in Table 3.

Table 3.
Management Prescriptions for the Proposed Anvil Points ACEC
Prescriptions are grouped by levels of protection afforded relevant and important values.
Value locations are shown on Map 1. Visual Resource Management (VRM) objectives are described in Appendix A.

Resource	*High Protection*	*Moderate Protection*	*Low Protection*
Visual	**V-1.** Manage the area to meet Visual Resource Management Class I objectives to preserve the existing character of the landscape.	**V-2.** Manage areas designated as very high or high visual sensitivity to meet Visual Resource Management Class I objectives. Manage all other areas to meet Visual Resource Management Class II objectives.	**V-3.** Manage areas designated as very high or high visual sensitivity to meet Visual Resource Management Class II objectives.
Geological	**G-1.** Protect and preserve the scientific and historic values of the cave and karst system. Allow for no physical disturbance to the cave or karst system surrounding the cave. Restrict activities that could cause direct or indirect impact to the cave or karst system such as collapse or dewatering. **G-2.** Provide for public safety, prevent inappropriate use, and address increased recreational demand as it arises.	**G-1.** Protect and preserve the scientific and historic values of the cave and karst system. Allow for no physical disturbance to the cave or karst system surrounding the cave. Restrict activities that could cause direct or indirect impact to the cave or karst system such as collapse or dewatering. **G-2.** Provide for public safety, prevent inappropriate use, and address increased recreational demand as it arises.	**G-1.** Protect and preserve the scientific and historic values of the cave and karst system. Allow for no physical disturbance to the cave or karst system surrounding the cave. Restrict activities that could cause direct or indirect impact to the cave or karst system such as collapse or dewatering. **G-2.** Provide for public safety, prevent inappropriate use, and address increased recreational demand as it arises.
Wildlife	**W-1.** Allow no ground-disturbing activities within the potential nesting habitats on the cliffs. **W-2.** Allow no new long-term human use (longer than two growing seasons) or ground-disturbing activities within the unroaded/unfragmented wildlife habitat located below the cliffs. **W-3.** Protect and preserve bat habitat values associated with the cave.	**W-1.** Allow no ground-disturbing activities within the potential nesting habitats on the cliffs. **W-3.** Protect and preserve the bat habitat values associated with the cave. **W-5.** Allow no ground-disturbing activities that would cause more than a 10% contiguous block of unroaded/unfragmented wildlife habitat located below the cliffs to become fragmented	**W-3.** Protect and preserve the bat habitat values associated with the cave. **W-4.** Allow no ground-disturbing activities within 0.25 mile of known raptor nests. **W-6.** Allow no ground-disturbing activities that would cause more than a 20% contiguous block of unroaded/unfragmented wildlife habitat located below the cliffs to become fragmented
Botanical/ Ecological	**P-1.** Allow no ground-disturbing activities within occupied or potential (0.25 miles of occupied) habitat for rare plants or significant plant communities. **P-2.** Revegetate any allowed surface disturbance using locally adapted native species. **P-3.** Allow natural ecosystem processes such	**P-9.** Allow no ground-disturbing activities within occupied habitat for rare plants or significant plant communities. **P-2.** Revegetate any allowed surface disturbance using locally adapted native species. **P-3.** Allow natural ecosystem processes such as rockslides to continue. Control wildfire only when human safety or property is at risk.	**P-10.** Allow no ground-disturbing activities that would result in a direct or indirect affect or disturbance to rare plants species or significant plant communities. **P-2** Revegetate any allowed surface disturbance using locally adapted native species. **P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have

	as rockslides to continue. Control wildfire only when human safety or property is at risk. **P-4.** Where practicable, restore to a naturally functioning state any existing human-caused disturbance that is impairing natural ecosystem processes affecting habitat for rare plant species or significant plant communities. **P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have no detrimental impact on long-term survival and reproduction of rare species or significant communities. **P-6.** Control noxious weeds using an integration of control techniques. Limit chemical control in rare plant populations or significant plant communities to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO, 1997). **P-8**. Manage significant grassland and shrubland communities to retain mid- to late-seral stage condition.	**P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have no detrimental impact on long-term survival and reproduction of rare plant species or significant plant communities. **P-6.** Control noxious weeds using integrated control techniques. Limit chemical control in rare plant populations or significant plant communities to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO, 1997).	no detrimental impact on long-term survival and reproduction of rare species or significant communities. **P-6.** Control noxious weeds using integrated control techniques. Limit chemical control in rare plant populations or significant plant communities to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO, 1997).

B. Magpie Gulch Proposed ACEC

For additional information on physical description or values, please refer to the (*Roan Plateau RMP Amendment: Evaluation of Proposed Areas of Critical Environmental Concern*, BLM, GSFO, 2002).

1. Physical Description

The proposed Magpie Gulch ACEC is situated on the east and northeast-facing slopes below the Roan Plateau (Map 3). The elevation drops from 9,200 feet at the cliff edge to 6,500 feet in the canyons below. The boundaries of the 5,846-acre ACEC would be virtually the same as for the WSA. The western boundary of the unit follows the eastern cliff edge of the Roan Plateau. To the north and east, the boundary is defined by private property and a power line ROW. The southern boundary is delineated by the JQS Road and private property. The proposed ACEC includes one 40-acre private inholding in the northern portion. Vegetation on north-facing slopes is dominated by mature to old-growth Douglas-fir; south-facing slopes consist of mixed mountain shrub communities at the higher elevations and pinyon-juniper at lower elevations. Benches and terraces along the lower slopes support sagebrush communities.

2. Values

2.1. Visual Resources

Magpie Gulch contains significant scenic values which meet the relevance criteria [BLM 1613.1.11.A(1)]. The scenic values also meet the importance criteria [BLM 1613.1.11.B(1) and (2)] as this easternmost portion of the Bookcliffs is not only locally important but also represents a significant visual feature in the landscape on a regional scale. The qualities and character of this scenic viewshed make it sensitive or vulnerable to adverse change. This value is irreplaceable.

2.2. Wildlife Resources

Magpie Gulch contains significant wildlife habitat values which meet the relevance criteria [BLM 1613.1.11.A(2)]. The wildlife values also meet the importance criteria [BLM 1613.1.11.B(2)]. This area is important in maintaining species richness and diversity. The unroaded nature of the area provides security among an array of habitat types important to a diverse array of species and is irreplaceable and exemplary in nature. This area is vulnerable to adverse changes that would cause habitat fragmentation and result in loss of species diversity. The area is recognized in the 1999 Oil and Gas SEIS as a wildlife seclusion area based on its outstanding wildlife values.

2.3. Botanical/Ecological Processes

This area meets the relevance criteria for natural processes or systems [BLM 1613.1.11.A(3)] as it contains several small, but excellent, examples of intact old-growth Douglas-fir communities. The area meets the importance criteria [BLM 1613.1.11.B(1) & (2)] because it represents a remnant community type within the region, thus it is an important site as an example of this community type.

3. Influencing Factors

3.1. Visual Resources

3.1.1. Conditions or Trends of the Potential ACEC. The proposed Magpie Gulch ACEC comprises the Roan Cliffs, a prominent backdrop for the communities of Parachute, Battlement Mesa, Rifle, and Silt and to travelers on Interstate 70 and Highway 13. The topographic relief is considerable, with the skyline rising three to four thousand feet above the valley floor. The stark contrast of the vertical outcrops of the shale-bearing Green River and Wasatch formations to the heavily vegetated slopes accentuates its rugged and scenic qualities. The steep topography and rugged nature of this unit have kept the area's visual integrity and scenic qualities intact. This proposed ACEC contains lands that have been identified as high and very high visual sensitivity areas. These consist of slopes over 30 percent within the viewshed of Highway 13.

To date, landscape modifications are very limited in the proposed Magpie Gulch ACEC and its current condition meets VRM Class II objectives (Appendix A). Decreased visual quality is a trend in the general area. With increased activities on both public and adjacent private lands, there is an inherent potential problem of degradation to visual resources. Scenic areas are vulnerable to fragmentation due to management activities. This fragmentation results in the loss of large intact open spaces, natural landscapes, and subsequently, scenic values.

3.1.2. Relationship to Other Resources or Activities. Many resource uses have the potential to degrade visual and scenic qualities found in the unit today, although development of other resources will be limited as most of the unit consists of steep slopes, which precludes many management activities.

Different relevant and important values identified in some of the ACECs may share or benefit from similar management prescriptions or needed protective stipulations. Under some alternatives, other resource values may outweigh the need for full protection of the important and relevant values. This is addressed through designating or not designating proposed ACECs, size adjustments to ACECs, and by changes in proposed management prescriptions and stipulations for the various alternatives.

3.1.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. Protection and enhancement of the visual values in the proposed Magpie Gulch ACEC is feasible and would likely be highly successful due to current conditions of the resource, and the status of land use allocations currently in place. The proposed ACEC contains limited ROWs, and a portion contains an existing lease oil and gas with stipulations that minimize or reduce threats to visual resources.

Current stipulations provide protective measures for 1,257 acres for VRM Class II areas (Map 4). In addition, no protective measures are currently in place to protect areas of high or very high sensitivity on slopes steeper than 30 percent that are seen from Highway 13. Only 25 acres of very high and high sensitivity areas are currently protected under the I-70 viewshed stipulation (NSO 18). Additional measures will provide needed protection of these very high and high sensitivity values and for the visual integrity for the unit as a whole.

Approximately 200 acres was leased along the northern boundary of the proposed Magpie Gulch ACEC (Map 3). The lease has stipulations attached under the 1999 Oil and Gas SEIS. Additional stipulations developed to protect the relevant and important values within the ACEC would not apply to this existing lease. However, disturbances resulting from this leased parcel should not impact the visual integrity of the unit as a whole.

3.1.4. Wisdom of Highlighting the Resource. The visual resource is already highlighted in the proposed Magpie Gulch ACEC, as it serves as the scenic backdrop in the landscape for several adjacent communities and major transportation corridors. The management objective and resulting proposed stipulations should enhance and protect the identified values. The public has indicated a high level of awareness and concern over visual values. Increased public awareness may create a demand for preservation and retention of the visual values as an integral part of these communities' social and economic character. It is unlikely that increased public awareness will result in further/increased degradation of resource values.

3.1.5. Boundary Review. Scoping and public comments to date cite few conflicts with visual resources. This may indicate support for preservation of visual resource values as well as a lack of management conflicts due to the steep topography and unroaded nature of this area. This area currently receives little human use.

High and very high visual sensitivity areas to the north of the proposed boundary were not included in this ACEC as much of this land is currently managed, and is proposed to be managed, as VRM Class II, which will preserve the existing landscape. In addition, these lands have been leased for oil and gas and will be developed under restrictions contained in the 1999 Oil and Gas SEIS (Map 3).

3.1.6. Relationship to Existing Rights. The proposed Magpie Gulch ACEC contains no existing mining claims or pre-FLPMA mineral leases. Existing oil and gas leases, shown on Map 3, include approximately 200 acres within the proposed ACEC. No protective stipulations for visual resources are attached to the existing leases.

3.2. Wildlife Resources

3.2.1. Conditions or Trends of the Potential ACEC. Wildlife habitats were found to be in good condition, per the 2002 land health assessment (BLM, GSFO, 2002). The majority of the lands located within the proposed boundary are steep and rugged. Topography and a lack of roads limit access, which results in limited human use of the area. The majority of human use occurs by non-motorized means during the big game hunting seasons in the fall. Wildlife habitats are diverse and vary from the steep shale cliffs to mature stands of old-growth Douglas-fir, aspen, mixed mountain shrublands, pinyon-juniper woodlands, sagebrush benches, and limited riparian areas.

The trend of wildlife habitats appears to be stable/static (BLM, GSFO, 2002). Within the greater area outside of the proposed ACEC, trends related to the condition of wildlife habitat vary. Human activity is much greater on adjacent lands with a variety of activities occurring including: livestock grazing, OHV use, oil and gas production, highways, power lines, and various primary and ancillary commercial and residential developments. It is possible that some or all of these activities could begin to occur on lands located within the proposed ACEC.

3.2.2. Relationship to Other Resources or Activities. Many resource uses have the potential to degrade wildlife values found within the proposed ACEC. Different relevant and important values identified in some of the ACECs may share or benefit from similar management prescriptions or needed protective stipulations. Under some alternatives, other resource values may outweigh the need for full protection of the important and relevant values. This is addressed through designating (or not designating) proposed ACECs, size adjustments to ACECs, and changes in proposed management prescriptions and stipulations for the various alternatives.

3.2.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. Proposed management prescriptions provide an opportunity to protect relevant and important wildlife values. Portions of the area may be adequately protected from some activities due to the steep and rugged nature of the habitats, particularly those within the cliffs. However, as human technologies advance, certain activities may threaten these values if no constraints are in place to protect them.

Other areas may be protected due to stipulations identified in the 1999 Oil and Gas SEIS. However, these stipulations applied only to oil and gas leasing, and some of the stipulations were subsequently determined to be inadequate to protect resource values from other management activities.

Per the formal 2002 land health assessment (BLM, GSFO, 2002) habitats are currently in good condition. Current habitat conditions, combined with the unroaded, rugged nature of the area, have resulted in limited identification of restorative prescriptions. However, the exclusion of natural fire disturbance has resulted in poorer-than-desired conditions in some habitat types. It is possible that prescriptive treatments could enhance wildlife habitat values. A combination of protection of current values, and improvement of habitats to desired condition, would optimize wildlife values in the proposed Magpie Gulch ACEC.

3.2.4. Wisdom of Highlighting the Resource. The management prescriptions and proposed stipulations are intended to maintain and protect the identified resource values. There is little concern with regard to the highlighting of wildlife values found within this proposed ACEC. Given the current unroaded nature of the area, limited human use occurs. If protected by proposed stipulations, use is not expected to increase significantly. Slight increases in human use may occur naturally, despite proposed stipulations, due to increased human population in the region and increased demand for recreation on public lands. Given the topography, proposed stipulations, and type of use anticipated, highlighting the resource is not expected to impair identified values.

3.2.5 Boundary Review. Portions of the proposed Magpie Gulch ACEC have relevant and important value related to wildlife on the cliff face and the unroaded, unfragmented portions of the lands below the cliffs (Map 3). The proposed boundary is believed to be the smallest size necessary to fully protect the combined resource values (wildlife, visual, and botanical).

3.2.6. Relationship to Existing Rights. The proposed ACEC contains no existing mining claims or pre-FLPMA mineral leases. Existing oil and gas leases are shown on Map 3. Existing leases include approximately 200 acres within the proposed Magpie Gulch ACEC. Protective stipulations were applied but may not fully protect the resource values. ACEC management prescriptions would apply to all uses and activities, however, new stipulations would not apply to pre-existing leases

Livestock grazing is an existing use, not precluded from the proposed ACEC. Livestock grazing is limited in the area due mainly to topography and no wildlife conflicts have been identified.

3.3. Botanical/Ecological Processes

3.3.1. Conditions or Trends of the Potential ACEC. The ACEC evaluation process determined that one rare plant community met relevance and importance criteria within the proposed Magpie Gulch ACEC (BLM, GSFO, August 2002). The proposed ACEC encompasses several small but excellent examples of old-growth Douglas-fir forest covering approximately 1,700 total acres (Map 3, Table 4). This community occurs as a number of stringers and large patches along north-facing slopes. It is considered an excellent example of its community type by the CNHP, with a B3 rank (see Appendix B for ranking criteria). The Douglas-fir community comprises a healthy mosaic of dense and open areas. Some small areas exhibit signs of beetle infestation. There is no human development within, or immediately adjacent to, this community within the Magpie Gulch area.

Table 4.
Rare Plant Species and Significant or Rare Plant Communities
within the Proposed Magpie Gulch ACEC
Common names and binomial synonomies are included in parentheses.
Colorado Natural Heritage Program (CNHP) ranking criteria are provided in Appendix B.

Common name	Scientific Name	Agency Status	CNHP Rank	Notes
Communities				
Old-growth Douglas-fir	*Pseudotsuga menziesii*			Considered a remnant and exemplary occurrence of this community type within the region.

3.3.2. Relationship to Other Resources or Activities. The Douglas-fir forest community within this proposed ACEC should be protected from activities that would disturb current conditions or fragment the habitat. These would include timber removal, fire suppression, structures, and road or trail construction.

3.3.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. The excellent condition of Douglas-fir communities requires little management to protect and maintain its value. Maintenance or enhancement of the community may be achieved by promoting natural systems and processes such as wildfire. The community should be protected from noxious weed infestation, human-caused disturbances and fragmentation.

3.3.4. Wisdom of Highlighting the Resource. Increasing public awareness of rare plants and plant communities in a general sense may create and promote an understanding of their value and unique management requirements. However, given that the general good health of the botanical resource in the proposed Magpie Gulch ACEC is due in large part to its inaccessibility to human visitors, this resource and its location should not be highly publicized to prevent degradation.

3.3.5. Boundary Review. The proposed boundary for the Magpie Gulch ACEC includes most of the 1,500 acres of the old-growth Douglas-fir forest resource that occurs on public lands on the Plateau.

3.3.6. Relationship to Existing Rights. The proposed ACEC contains no existing mining claims or pre-FLPMA mineral leases. Existing oil and gas leases are shown on Map 3. Existing leases include approximately 200 acres within the proposed Magpie Gulch ACEC. Protective stipulations for steep slopes were applied but may not fully protect the ecological resource values. ACEC management prescriptions would apply to all uses and activities; however, new stipulations would not apply to pre-existing leases

4. Possible Management Prescriptions – Proposed Magpie Gulch ACEC

All authorized actions will include a monitoring and compliance plan specifically addressing the relevant and important values within the proposed ACEC. A range of possible management prescriptions is outlined in Table 5.

Table 5.
Management Prescriptions for the Proposed Magpie Gulch ACEC
Prescriptions are grouped by levels of protection afforded relevant and important values.
Value locations are shown on Map 3. Visual Resource Management (VRM) objectives are described in Appendix A.

Resource	*High Protection*	*Moderate Protection*	*Low Protection*
Visual	**V-1.** Manage the area to meet Visual Resource Management Class I objectives to preserve the existing character of the landscape.	**V-2.** Manage areas designated as very high or high visual sensitivity to meet Visual Resource Management Class I objectives. Manage all other areas to meet Visual Resource Management Class II objectives.	**V-3.** Manage areas designated as very high or high visual sensitivity to meet Visual Resource Management Class II objectives.
Wildlife	**W-2.** Allow no new long-term human use (longer than two growing seasons) or ground-disturbing activities within the unroaded/unfragmented wildlife habitat located below the cliffs.	**W-5.** Allow no ground-disturbing activities that would result in fragmentation to more than a 10% contiguous block of unroaded / unfragmented wildlife habitat located below the cliffs.	**W-6.** Allow no ground-disturbing activities that would result in fragmentation to more than a 20% contiguous block of unroaded / unfragmented wildlife habitat located below the cliffs.
Botanical/ Ecological	**P-9.** Allow no human-induced disturbances or fragmentation of Douglas-fir habitat, including removal of any size-class trees. **P-3.** Allow natural ecosystem processes such as rock slides to continue. Control wildfire only when human safety or property is at risk. **P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have no detrimental impact on long-term survival and reproduction of rare plant species or significant plant communities. **P-6.** Control noxious weeds using an integration of control techniques. Chemical weed control in rare plant populations or significant plant communities will be limited to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO, 1997).	**P-11.** Allow no human-induced disturbances that would result in fragmentation to more than 10% of contiguous Douglas-fir habitat, including removal of any size-class trees **P-3.** Allow natural ecosystem processes such as rock slides to continue. Control wildfire only when human safety or property is at risk. **P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have no detrimental impact on long-term survival and reproduction of rare plant species or significant plant communities. **P-6.** Control noxious weeds using an integration of control techniques. Chemical weed control in rare plant populations or significant plant communities will be limited to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO, 1997).	**P-12.** Allow no human-induced disturbances that would result in fragmentation to more than 20% of contiguous Douglas-fir habitat, including removal of any size-class trees. **P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have no detrimental impact on long-term survival and reproduction of rare plant species or significant plant communities. **P-6.** Control noxious weeds using an integration of control techniques. Chemical weed control in rare plant populations or significant plant communities will be limited to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO, 1997).

C. East Fork Parachute Creek Proposed ACEC

For additional information on physical description or values, please refer to the (*Roan Plateau RMP Amendment: Evaluation of Proposed Areas of Critical Environmental Concern*, BLM, GSFO, 2002).

1. Physical Description

The East Fork of Parachute Creek is a small but biologically significant tributary to the Colorado River. The headwaters for this creek begin at approximately 9000 feet in elevation with gently rolling hills of aspen forests, sagebrush and snowberry shrublands, and grasslands. The East Fork of Parachute Creek originates near the eastern rim of the Roan Plateau and flows westward, cutting through the Green River shale formation to form a deep canyon before plunging 200 feet into a narrow, scenic box canyon. The resource values within the proposed ACEC include a scenic 200-foot high waterfall and box canyon, Colorado River cutthroat trout habitat, an endemic plant species, and three significant plant communities (Map 4).

A Wilderness Character Inventory of this watershed found that 10,389 acres also met the criteria for a Wilderness Study Area (WSA).

2. Values

2.1. Visual Resources

Portions of the East Fork Parachute Creek ACEC meet the relevance criteria [BLM 1613.1.11.A(1)] by containing significant scenic values. The area meets the importance criteria [BLM 1613.1.11.B(1) and (2)] because the scenic values are irreplaceable and deserving of special management. The qualities and character of this scenic viewshed make it sensitive or vulnerable to adverse change.

2.2. Wildlife Resources

This area meets the relevance criteria for fisheries resources [BLM 1613.1.11.A(2) and B(1) and B(2)] because it contains a native, wild, naturally-reproducing population of Colorado River cutthroat trout. In addition, the watershed in which these fish live meets the relevance criteria of BLM 1613.1.11.A(3) because it supports vital ecosystem processes and maintains crucial habitats important for the long-term survival of this subspecies. Both the East Fork of Parachute Creek and JQS Gulch contain this BLM Sensitive Species.

The proposed East Fork of Parachute Creek ACEC also meets the importance criteria [BLM 1613.1.11.B(1) and (2)] because the populations found within this area are designated as Conservation Populations in the *Conservation Agreement and Strategy for Colorado River Cutthroat Trout, in the States of Colorado, Utah, and Wyoming.* Conservation Populations are those that are at least 90 percent genetically pure and retain the phenotypic attributes of the subspecies. They are regionally and nationally important in the overall conservation of the species and are given a high priority for management and protection.

2.3. Botanical/Ecological Processes

The East Fork Parachute Creek proposed ACEC meets the relevance criteria for natural processes or systems [BLM 1613.1.11.A(3)] because it contains two narrowly restricted Colorado endemic plant species, hanging garden sullivantia and southwest stickleaf, as well as two rare riparian plant communities and one rare shale barren community. The area also meets the importance criteria [BLM 1613.1.11.B(1) and (2)] because the rare plant and community found in this drainage are of excellent condition and abundance and vulnerable to adverse change.

3. Influencing Factors

3.1. Visual Resources

3.1.1. Conditions or Trends of the Potential ACEC. The East Fork of Parachute Creek Canyon was determined to be one of five high-quality (Class A) scenic areas in the 1984 Glenwood Springs RMP (BLM, GSFO, 1984). This high-quality scenic area starts where the East Fork of Parachute Creek Falls

drops into a dramatic box canyon running to the west. The viewshed consists of steep canyon walls with vertical relief over 2,000 feet. The narrow, incised canyon and the changes in form, line, and color create dramatic visual contrast, which has made it unusually rare and notably distinctive. This landscape is natural in appearance and has maintained its visual integrity. This scenic area is extremely vulnerable to fragmentation due to management activities. This steep and narrow canyon creates convergence to the eye, which would accentuate any disturbance. Loss of this high-quality scenic area would be irreplaceable.

A total of 960 acres in the box canyon area of the proposed East Fork ACEC meets relevance and importance criteria for significant scenic values. Current stipulations provide protective measures designed to accomplish VRM Class II objectives on approximately 448 acres in this area (Appendix A). The remaining area within the proposed East Fork ACEC generally retains its natural appearance and condition. The landscape around the East Fork of Parachute Creek is natural in appearance and its visual integrity has been maintained. Modifications such as fences, roads, and ponds are evident in the landscape along some of the ridge and rim roads and on the north-facing slopes. Additional recreation-related impacts are limited to dispersed camping sites off the main ridge and rim roads that are typically used during hunting season. Trends indicate that additional modifications in the landscape can be expected due to increases in both recreation and in management actions. Additional modifications and disturbances to the landscape could have a negative effect on the existing visual integrity and the natural setting of the current landscape. This area is currently being managed as VRM Class III (Appendix A).

The VRM Class II objective "retains" the existing characteristic landscape and allows for limited changes in the landscape due to management activities that should be low and not evident to the casual observer. However, VRM Class II objectives do not provide for "preservation" of the existing landscape, which focuses on natural ecological changes. Additional protective measures will provide for visual integrity for the proposed ACEC unit as a whole on a landscape scale.

3.1.2. Relationship to Other Resources or Activities. Many resource uses have the potential to degrade visual and scenic qualities found in the unit today. These values are at high risk and vulnerable to change, as the box canyon dominates the viewshed with its steep and rugged qualities. Any disturbance to the natural landscape characteristics will fragment the visual characteristics and dominate the landscape, thus attracting attention.

Protective measures could be taken to reduce adverse effects and fragmentation to visual and scenic values. These should include preventing any new long-term disturbances that disrupt visual integrity, such as linear disturbances and changes to the color, form, and texture of the landscape. Different relevant and important values identified in some of the ACECs may share or benefit from similar management objectives or needed protective stipulations.

3.1.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. Protection and enhancement of the visual values in the proposed East Fork Parachute Creek ACEC is feasible and would probably be highly successful due to the current condition of the resource and the status of land use allocations currently in place. The ACEC includes no existing ROWs or oil and gas leases.

3.1.4. Wisdom of Highlighting the Resource. The management objective and resulting stipulations should enhance and protect the identified values. The public has indicated a high level of awareness and concern over visual values. Increased public awareness may create a demand for preservation and retention of visual values as an integral part of the social and economic character of these communities. It is unlikely that increased public awareness will cause increased degradation of resource values.

3.1.5. Boundary Review. The boundary delineation for visual resources in this ACEC was based on the high scenic qualities of East Fork of Parachute Creek Falls and the box canyon to the west. These values were identified, and determined to be one of five high-quality (Class A) scenic areas, in the Glenwood Springs RMP (BLM,GSFO, 1984). A viewshed analysis showed high and very high visual sensitivity from East Fork of Parachute Creek Falls following the route down into the box canyon to the western BLM boundary (Maps 4, 5, and 6). This viewshed analysis was based on elevation features using USGS 7.5-minute Digital Elevation Models.

3.1.6. Relationship to Existing Rights. This ACEC includes no existing mining claims or pre-FLPMA leases.

3.2. Wildlife Resources

3.2.1. Conditions or Trends of the Potential ACEC. Based on the 2001 land health assessment (BLM, GSFO, 2001), the condition of fish habitat and related values within this proposed ACEC varied from fair to good. The East Fork of Parachute Creek, which makes up the majority of the fish habitat, was rated as PFC (properly functioning condition). One mile of JQS Gulch was rated PFC, while four-tenths mile was rated Functioning at Risk with no apparent trend. One concern was the amount of noxious weeds within the drainage.

However, contrary to findings in the 2001 land health assessment report, the current trend of fish habitat appears to be slightly downward. Livestock grazing and drought have resulted in less-than-desirable habitat condition within portions of the drainage. Bank damage, weeds, and utilization of riparian vegetation have led to reduced habitat condition, based on observations by BLM personnel. (Fresques 2002). Riparian habitats are fragile and susceptible to adverse change. They also respond quickly under proper management. Within the greater area outside of the proposed ACEC, the scale at which to determine trends related to Colorado River cutthroat trout habitat are difficult to assess or determine. No occupied streams occur in close proximity to the planning area. Other habitats above the rim that contain this species have similar trends related to habitat condition. Other activities occurring on and within adjacent lands include livestock grazing, OHV use, roads, power lines, and various primary and ancillary commercial and residential developments. It is possible that some or all of these activities could begin to occur at a greater extent on lands located within the proposed ACEC.

3.2.2. Relationship to Other Resources or Activities. Many resource uses have the potential to degrade fishery values found within the proposed ACEC. All other resource uses would be managed under the identified management prescriptions and/or stipulations.

3.2.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. Maintaining and preserving natural function of ecosystem/watershed processes will protect fisheries values. Timely and thorough project monitoring will ensure that sensitive wildlife and fishery values are protected and management objectives are achieved.

The fishery habitats within the proposed ACEC have been identified for improvement. It is possible that prescriptive treatments/use limits could enhance and improve fishery habitat values. A combination of protection of current values, and improvement of habitats to desired condition, makes sense where appropriate and where resource conflicts can be negated.

3.2.4. Wisdom of Highlighting the Resource. The management prescriptions and proposed stipulations are intended to maintain and protect the identified resource values. However, there is the potential that highlighting the resource (Colorado River cutthroat trout) could result in greater angling pressure. This could be controlled through regulations defined by the Colorado Division of Wildlife. It is likely that slight increases in human use may occur naturally due to increases in human populations and ever-increasing demands for recreation opportunities on public lands.

3.2.5. Boundary Review. Although the Colorado River cutthroat trout themselves are a relevant and important value, the surrounding watershed is also important in maintaining suitable water quality and functional, high quality habitat. Thus, the boundaries include more than the stream and riparian habitat.

3.2.6. Relationship to Existing Rights. This ACEC includes no existing mining claims or pre-FLPMA leases in this ACEC. Livestock grazing is an existing use, and the proposed ACEC does not preclude this activity. Livestock grazing can directly affect the relevant and important values related to fisheries. Because management conflicts have been identified, management of riparian habitats will be addressed as part of this planning process.

3.3. Botanical/Ecological Processes

3.3.1 Conditions or Trends of the Potential ACEC. The ACEC evaluation process determined that two plant species and three plant communities met the relevance and importance criteria within the proposed East Fork Parachute Creek ACEC (BLM, GSFO, August 2002). These values are listed and described in Table 6 and their distributions are presented in Map 4. In addition, Utah fescue, an upland grass, is found in three locations in the proposed ACEC. This species was formerly considered a BLM Sensitive Species and is restricted to Green River shales in the Piceance Basin and a small area of Utah (Weber and Wittmann 2001).

Table 6.
Rare Plant Species and Significant or Rare Plant Communities within the Proposed East Fork Parachute Creek ACEC
Common names and binomial synonomies are included in parentheses.
Colorado Natural Heritage Program (CNHP) ranking criteria are provided in Appendix B.

Common Name	Scientific Name	Agency Status	CNHP Rank	Notes
Species				
Southwest (Arapien) stickleaf	*Nuttallia (Mentzelia) argillosa (Mentzelia rhizomata)*	BLM Sensitive	G3/S2	Restricted to the Green River Formation
Hanging garden sullivantia	*Sullivantia hapemanii* var. *purpusii*		G3/S3	Colorado endemic. Restricted to calcareous seeps; 62% of all known populations occur on the Roan Plateau.
Utah fescue	*Festuca (Argillochloa) dasyclada*	Formerly BLM Sensitive		Restricted to the Green River Formation
Communities				
Blue spruce/red-osier dogwood	*Picea pungens/Cornus stolonifera (Swida) sericea)*		G1G2/S1S2	Rare in Colorado and globally
Boxelder/ narrowleaf cottonwood/red-osier dogwood	*Acer negundo (Negundo aceroides)/ Populus angustifolia/ Cornus stolonifera (Swida sericea)*		G2/S2	Rare in Colorado and globally
Indian ricegrass shale barrens	*Oryzopsis (Achnatherum) (Stipa) hymenoides*		G2/S2	Rare in Colorado and globally Known from three counties in Colorado.

A number of "hanging gardens" occur within the proposed East Fork Parachute Creek ACEC (Map 4). These unique wetland features are limited to seep areas on canyon walls where year-round water is available and the substrate is soft enough to allow roots to penetrate deeply, holding plants on the often extremely steep walls. The hanging gardens are most abundant on the north-facing walls along the East Fork of Parachute Creek and Northwater Creek where Green River shale beds are exposed. This wetland type is characterized by the presence of hanging garden sullivantia, a Colorado endemic restricted to calcareous seeps in steep walls. Although this species occurs in several locations in west central Colorado, the most numerous and extensive occurrences (nearly 62 percent) are on the Roan Plateau (CNHP 1997). A second endemic plant species, Southwest stickleaf, is a BLM sensitive species that occurs on Green River shales (Spackman *et. al*. 1997) near the falls.

Two rare riparian communities occur within this reach of the East Fork of Parachute Creek. The blue spruce/red-osier dogwood community is found in only a few riparian areas in Colorado. A lower elevation community of boxelder, narrowleaf cottonwood, and red-osier dogwood occurs downstream. This community is considered rare in Colorado as well as globally. Both of these communities are in good condition and considered to be the examples of their respective types (biodiversity rank B2)(CNHP 1997).

The Indian ricegrass shale barrens community occurs on south-facing slopes in the East Fork Parachute Creek drainage (CNHP 1997). The slopes are composed of shale or mudstone soils, often capped with a thin layer of gravel (Reid *et. al*. 1994), and are sparsely vegetated. Indian ricegrass is the dominant species, with smaller amounts of other grasses, forbs, and scattered shrubs.

3.3.2 Relationship to Other Resources or Activities. The population of hanging garden sullivantia in the proposed East Fork Parachute Creek ACEC depends on specific hydrological conditions and substrate for its ongoing health. Specific and limited habitat requirements make these species particularly susceptible to activities that disrupt local hydrological processes such as interception or contamination of groundwater or any upslope activity such as road or trail construction that would cause erosion or siltation. Likewise, any disturbance to the rock walls of the canyons where the seeps occur would negatively impact these species.

Rarity and limited habitat make the two rare riparian communities and one upland community particularly susceptible to any activity which causes surface disturbance to these limited habitat areas, degrades the quality of the habitat, or introduces negative influences, such as noxious weeds, which would therefore be seriously deleterious to these resources. These would include high livestock utilization, structures, or any other source of surface disturbance such as roads, trails, and off-road traffic, as well as any such up-slope activity that would result in surface disturbance, degradation, or other negative influences on the habitat.

3.3.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. Generally promoting native plant species and communities as well as natural systems and processes would protect and restore botanical and ecological values within the proposed East Fork Parachute Creek ACEC. Specific opportunities would include protecting the occupied and potential habitat of rare plants and plant communities from ground-disturbing activities and hydrological perturbations to reduce the potential for negative impacts to these resources, as well as promoting the perpetuation of natural systems and processes by revegetation of surface disturbance with locally adapted native plant species. Conducting ongoing, systematic monitoring for, and timely control of, noxious weeds is important to any healthy and well-functioning vegetation resource. Timely and thorough project monitoring will ensure that sensitive botanical and ecological values are protected and management prescriptions are achieved.

3.3.4. Wisdom of Highlighting the Resource. Increasing public awareness of rare plants and plant communities in a general sense may create and promote an understanding of their value and unique management requirements. However, given the susceptibility of these resources to disturbance, the precise location of these species and communities should not be highly publicized to prevent inadvertent degradation of the resources and their habitats by increased visitation.

3.3.5. Boundary Review. The boundary for this ACEC includes all rare plant-occupied and potential habitat (Map 4). However, the potential habitat boundaries are based on an estimated extent of surface hydrological processes, with no information regarding subsurface hydrology. Therefore, as the subsurface conditions and extent may be as important, or more so, to rare plants, the boundary for the proposed ACEC may not actually include all potential rare plant habitats.

3.3.6. Relationship to Existing Rights. This proposed ACEC includes no existing mining claims or pre-FLPMA leases. Livestock grazing is an existing use and not precluded from the ACEC. Livestock grazing has the potential to impact rare plants and plant communities, especially the riparian communities.

4. Possible Management Prescriptions – Proposed East Fork Parachute Creek ACEC

All authorized actions will include a monitoring and compliance plan specifically addressing the relevant and important values within the proposed ACEC. A range of management prescriptions is outlined in Table 7.

Table 7.
Management Prescriptions for the Proposed East Fork Parachute Creek ACEC
Prescriptions are grouped by levels of protection afforded relevant and important values.
Value locations are shown on Map 4. Visual Resource Management (VRM) objectives are described in Appendix A.

Resource	*High Protection*	*Moderate Protection*	*Low Protection*
Visual	**V-1.** Manage the area to meet Visual Resource Management Class I objectives to preserve the existing character of the landscape.	**V-2.** Manage areas designated as very high or high visual sensitivity to meet Visual Resource Management Class I objectives. Manage all other areas to meet Visual Resource Management Class II objectives.	**V-3.** Manage areas designated as very high or high visual sensitivity to meet Visual Resource Management Class II objectives.
Wildlife	**W-7.** Allow no loss or degradation of fish habitat and associated watershed that would cause a negative impact to Colorado River cutthroat trout population numbers. **W-8.** Allow no new long-term (greater than two growing seasons) ground-disturbing activities that would result in erosion and measurable sedimentation into occupied streams. **W-9.** Allow no activities that would result in streambank disturbance to more than 10% percent of the reaches contained within the ACEC.	**W-7.** Allow no loss or degradation of fish habitat that would cause a negative impact to Colorado River cutthroat trout population numbers. **W-9.** Allow no activities that would result in streambank disturbance to more than 10% percent of the reaches contained within the ACEC. **W-10.** Allow no new long-term (greater than two growing seasons) ground-disturbing activities within portions of Colorado River cutthroat habitat designated as high or moderate risk. **W-11.** Locate allowed ground-disturbing activities in areas with the least potential for erosion in the remainder of the ACEC located outside areas designated high or moderate risk.	**W-7.** Allow no loss or degradation of fish habitat that would cause a negative impact to Colorado River cutthroat trout population numbers. **W-11.** Locate allowed ground-disturbing activities in areas with the least potential for erosion in the remainder of the ACEC located outside areas designated high or moderate risk. **W-12.** Allow no new long-term (greater than two growing seasons) ground-disturbing activities within those portions of Colorado River cutthroat trout habitat shown designated as high risk.
Botanical/ Ecological	**P-13.** Allow no ground-disturbing activities in areas designated as high or moderate risk for rare plants or significant plant communities. **P-14.** Allow no activities that would disturb, alter, or interrupt the hydrologic regime within the hydrological processes areas that support rare plant species or significant plant communities (designated as high or moderate risk). **P-2.** Revegetate any allowed surface disturbance using locally adapted native species.	**P-15.** Allow no ground-disturbing activities in areas designated as high risk for rare plants or significant plant communities. Minimize disturbance in moderate risk areas through relocation of disturbances and mitigation. **P-16.** Locate ground-disturbing activities in areas with the least potential for erosion or other disturbances to rare plants or significant plant communities in the remainder of the ACEC located outside designated high or moderate risk areas.	**P-10.** Allow no ground-disturbing activities that would result in a direct or indirect affect or disturbance to rare plants species or significant plant communities. **P-17.** Relocate and mitigate activities that would disturb, alter, or interrupt the hydrologic regime within the watershed areas that support rare plant species or significant plant communities (designated as high or moderate risk).

	P-3. Allow natural ecosystem processes such as rockslides to continue. Control wildfire only when human safety or property is at risk. **P-4.** Where practicable, restore to a naturally functioning state any existing human-caused disturbance that is impairing natural ecosystem processes affecting habitat for rare plant species or significant plant communities. **P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have no detrimental impact on long-term survival and reproduction of rare plant species or significant plant communities. **P-6.** Control noxious weeds using integrated control techniques. Limit chemical weed control in rare plant populations or significant plant communities to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO997). **P-13.** Maintain the significant riparian plant communities in mid-to-late seral stage to maintain the current ecological values.	**P-16.** Relocate and mitigate activities that would disturb, alter, or interrupt the hydrologic regime within the watershed areas that support rare plant species or significant plant communities (designated as high or moderate risk). **P-2.** Revegetate any allowed surface disturbance using locally adapted native species. **P-3.** Allow natural ecosystem processes such as rockslides to continue. Control wildfire only when human safety or property is at risk. **P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have no detrimental impact on long-term survival and reproduction of rare plant species or significant plant communities. **P-6.** Control noxious weeds using integrated control techniques. Limit chemical weed control in rare plant populations or significant plant communities to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO, 1997).	**P-2.**Revegetate any allowed surface disturbance using locally adapted native species. **P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have no detrimental impact on long-term survival and reproduction of rare plant species or significant plant communities. **P-6.** Control noxious weeds using integrated control techniques. Limit chemical weed control in rare plant populations or significant plant communities to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO, 1997).

D. Trapper Creek Proposed ACEC

For additional information on physical description or values, please refer to the (*Roan Plateau RMP Amendment: Evaluation of Proposed Areas of Critical Environmental Concern*, BLM, GSFO, 2002).

1. Physical Description

Northwater Creek, Trapper Creek, and the East Middle Fork of Parachute Creek flow roughly parallel to the East Fork of Parachute Creek. Northwater Creek and Trapper Creek are smaller tributaries with headwaters at the eastern edge of the Roan Plateau and flow four to five miles across the Plateau before merging to form the East Middle Fork of Parachute Creek. Map 5 shows the location of this proposed ACEC.

Both Trapper and Northwater Creeks cut through the Green River shale formation, albeit more gradually than the East Fork of Parachute Creek, thus the upper reaches of these drainages have more gentle side slopes. The canyon walls become steeper and more abrupt just above their confluence. The East Middle of Fork Parachute Creek continues to cut deeper into the Green River shale before plunging over a waterfall approximately one mile west of the public land boundary. The riparian vegetation in these three drainages is not as diverse as that in the East Fork; however, the East Middle Fork of Parachute Creek and the lower segment of Northwater Creek also support hanging gardens.

2. Values

2.1. Wildlife Resources

This area meets the relevance criteria for fisheries resources [BLM 1613.1.11.A(2)] because it contains a genetically pure population of native, wild, naturally-reproducing Colorado River cutthroat trout. In addition, the watershed in which these fish live meets the relevance criteria [BLM 1613.1.11.A(3)] because it supports vital ecosystem processes and maintains crucial habitats important for the long-term survival of cutthroat trout. Trapper, Northwater, and the East Middle Fork of Parachute Creek all contain populations of this BLM Sensitive Species.

The proposed Trapper Creek ACEC also meets the importance criteria [BLM 1613.1.11.B(1) and (2)] because the populations found within this area are designated as Core Conservation Populations in the *Conservation Agreement and Strategy for Colorado River Cutthroat Trout, in the States of Colorado, Utah, and Wyoming.* Core Conservation Populations are defined as those that have a genetic purity greater than 99 percent and have not been impacted by genetic alteration linked to human intervention. These populations serve as the primary source of gametes (sperm and eggs) for introductions and reintroductions through transplants.

Core Conservation Populations, including the populations within this proposed ACEC, are considered regionally and nationally important in the overall conservation of the species and are given the highest priority for management and protection. They are considered unique and irreplaceable.

2.2. Botanical/Ecological Processes

The Trapper Creek ACEC meets the relevance criteria for natural processes or systems [BLM 1613.1.11.A(3)] because it contains hanging garden sullivantia, a narrowly restricted Colorado endemic species as well as a rare shale barren community. The area also meets the importance criteria [BLM 1613.1.11.B(1) and (2)], since the Roan Plateau hanging garden sullivantia occurrences comprise nearly 62 percent of the total known populations and are therefore of special consequence and vulnerable to adverse change.

3. Influencing Factors

3.1. Wildlife Resources

3.1.1. Conditions or Trends of the Potential ACEC. The condition of fish habitat and related values within this proposed ACEC varied from fair to good, based on the 2001 land health assessment (BLM, GSFO, 2001). Riparian Proper Functioning Condition (PFC) assessments on Trapper Creek showed 6.8

miles of stream to be Functioning at Risk, and 0.5 miles located within a livestock exclosure as Properly Functioning. Northwater Creek had 7.3 miles rated as Functioning at Risk.

However, the current trend of fish habitat appears to be slightly downward (Fresques 2002), resulting in less-than-desirable habitat condition within portions of the drainage. Bank damage, the presence of noxious weeds, and utilization of riparian vegetation has led to reduced habitat condition. Riparian habitats are fragile and susceptible to adverse change. They also respond quickly under proper management. Within the greater area outside of the proposed ACEC, the scale at which to determine trends related to Colorado River cutthroat trout habitat are difficult to assess or determine. No habitat for this species occurs in close proximity to the planning area. Other habitats above the rim that contain this species have similar trend related to habitat condition. Other activities occurring within and on adjacent lands include livestock grazing, OHV use, roads, power lines, and various primary and ancillary commercial and residential developments. It is possible that some or all of these activities could begin to occur at a greater extent on lands located within the proposed ACEC.

3.1.2. Relationship to Other Resources or Activities. Many resource uses have the potential to degrade fishery values found within the proposed ACEC. All other resource uses would be managed under the identified management prescriptions and/or stipulations.

3.1.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. Proposed management prescriptions are identified with the intent of protecting relevant and important fishery habitat values. These prescriptions provide an opportunity to protect these values.

In the 2001 land health assessment (BLM, GSFO, 2001) habitats were generally in fair to good condition. However, based on visual observations over the past three years, conditions vary from poor to good. The fishery habitats within the proposed ACEC have been identified for improvement. It is possible that prescriptive treatments/use limits could enhance and improve fishery habitat values. A combination of protection of current values and improvement of habitats to desired condition would optimize fish and wildlife values in the proposed Trapper Creek ACEC.

3.1.4. Wisdom of Highlighting the Resource. The management prescriptions and proposed stipulations are intended to maintain and protect the identified resource values. However, there is the potential that highlighting the resource (Colorado River cutthroat trout) could result in greater angling pressure. This could be controlled through regulations defined by the Colorado Division of Wildlife. It is likely that slight increases in human use may occur naturally due to increases in human populations and ever-increasing demands for recreation opportunities on public lands.

3.1.5. Boundary Review. Although the Colorado River cutthroat trout themselves are a relevant and important value, the watershed in which they reside is also important to maintaining suitable water quality and functional, high-quality habitat. Therefore, the ACEC boundaries encompass portions of the watershed beyond the stream corridor.

3.1.6. Relationship to Existing Rights. This ACEC includes no existing mining claims or pre-FLPMA oil and gas leases. Livestock grazing is an existing use that is not precluded in this ACEC. Livestock grazing can directly affect the relevant and important values related to fisheries.

3.2. Botanical/Ecological Processes

3.2.1 Conditions or Trends of the Potential ACEC. The ACEC evaluation process determined that one plant species, hanging garden sullivantia, and the shale barren plant community met relevance and importance criteria within the proposed Trapper Creek ACEC (BLM, GSFO, 2002). These values are listed and described in Table 8 and the distributions are presented on Map 5.

Hanging garden sullivantia is a Colorado endemic that is narrowly restricted to calcareous seeps on steep walls. This species occurs in several locations in west central Colorado. However, the most numerous and extensive occurrences (nearly 62 percent) are on the Roan Plateau (CNHP 1997). Hanging garden

sullivantia occurs in "hanging garden" sites in the proposed Trapper Creek ACEC (Map 5). These unique wetland features are limited to seeps on canyon walls where year-round water is available and the substrate is soft enough to allow roots to penetrate deeply, holding plants onto the often extremely steep walls. The hanging gardens are most abundant on the north-facing slopes along the East Middle Fork of Parachute Creek and lower Northwater Creek, where the Green River shale beds are exposed in the canyon walls.

Table 8.
Rare Plant Species Located within the Proposed Trapper Creek ACEC
Common names and binomial synonomies are included in parentheses.
Colorado Natural Heritage Program (CNHP) ranking criteria are provided in Appendix B.

Common Name	Scientific Name	Agency Status	CNHP Rank	Notes
Species				
Hanging garden sullivantia	*Sullivantia hapemanii* var. *purpusii*		G3/S3	Colorado endemic. Restricted to calcareous seeps; 62% of all known populations occur on the Roan Plateau.
Indian Ricegrass shale barrens	*Oryzopsis (Achnatherum)(Stipa) hymenoides*		G2/S2	Rare in Colorado and globally Known from three counties in Colorado.
Utah fescue	*Festuca (Argillochloa) dasyclada*	Formerly BLM Sensitive		Restricted to Green River shale formation.

The Indian ricegrass shale barrens community occurs on south-facing slopes composed of shale or mudstone soils, often capped with a thin layer of gravel (Reid et. al. 1994). These areas are sparsely vegetated. Indian ricegrass is the dominant species, among smaller amounts of other grasses, forbs, and scattered shrubs. This community is found on south-facing slopes of Northwater Creek and Trapper Creek (CNHP 1997), although the precise locations were not mapped.

Utah fescue, an upland grass, is found in two locations in the proposed ACEC. The species was formerly considered a BLM Sensitive Species and is restricted to Green River shales in the Piceance Basin and a small area in Utah (Weber and Wittmann 2001). One occurrence of a rare plant community occurs on nearby private land: the Western slope sagebrush/Thurber fescue community is limited to western Colorado (Johnston 1987), and this is the only occurrence of the community on the Plateau.

3.2.2 Relationship to Other Resources or Activities. The hanging garden sullivantia in the proposed Trapper Creek ACEC depends on specific hydrological conditions and substrate for its ongoing health and continuance. These specific and limited habitat requirements make this species particularly susceptible to any activity which disrupts local hydrological processes such as interception or contamination of subsurface water or any up-gradient activity such as road or trail construction that would result in erosion or siltation. Likewise, any physical disturbance to the rock walls of the canyons where the seeps occur would negatively impact this species.

3.2.3. Opportunities for Protection and/or Restoration of Potential ACEC Values. Generally promoting native plant species and communities as well as natural systems and processes would protect and restore botanical and ecological values within the proposed Trapper Creek ACEC. Specific opportunities would include protecting the occupied and potential habitat of rare plants and plant communities from ground-disturbing activities and hydrological perturbations, in order to reduce the potential for negative impacts to these resources as well as promote the perpetuation of natural systems and processes by revegetation of surface disturbance with locally adapted native plant species.

Conducting ongoing, systematic monitoring for, and timely control of, noxious weeds is important to any healthy and well-functioning vegetation resource. Timely and thorough project monitoring will ensure that sensitive botanical and ecological values are protected and management prescriptions are achieved.

3.2.4. Wisdom of Highlighting the Resource. Increasing public awareness of rare plants in a general sense may create and promote an understanding of their value and unique management requirements. However, given the susceptibility of these resources to disturbance, the precise location of these species should not be publicized to prevent degradation of the resources and their habitats by increased visitation.

3.2.5 Boundary Review. The boundary of the proposed Trapper Creek ACEC includes all rare plant and plant community-occupied and potential habitat. However, the potential habitat boundaries are based on an estimated extent of surface hydrological processes, with no information regarding subsurface hydrology. Therefore, as the subsurface conditions and extent may be as important, or more so, to rare plants, the boundary for the proposed ACEC may actually not include all potential rare plant habitats.

3.2.6. Relationship to Existing Rights. The proposed ACEC includes no existing mining claims or pre-FLPMA leases. Livestock grazing is an existing use and is not precluded from the proposed Trapper Creek ACEC. Livestock grazing has the potential to affect rare plants and rare plant communities negatively.

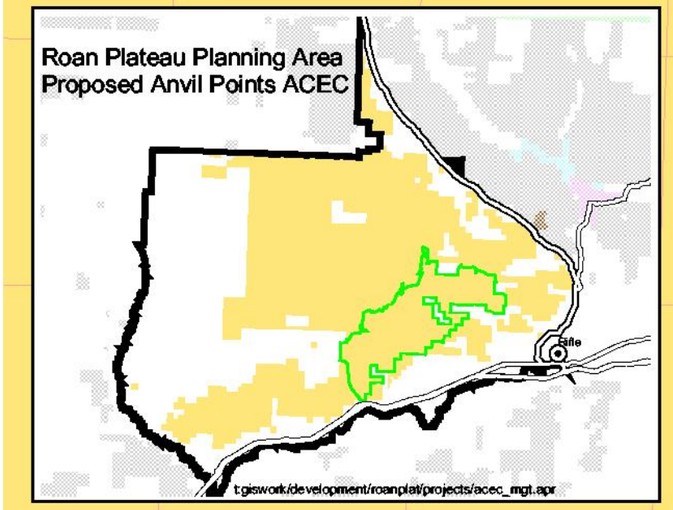
4. Possible Management Prescriptions – Proposed Trapper Creek ACEC

All authorized actions will include a monitoring and compliance plan specifically addressing the relevant and important values within the proposed ACEC. A range of possible management prescriptions is outlined in Table 9.

Table 9.
Management Prescriptions for the Proposed Trapper Creek ACEC
Prescriptions are grouped by levels of protection afforded relevant and important values.
Value locations are shown on Map 5. Visual Resource Management (VRM) objectives are described in Appendix A.

Resource	*High Protection*	*Moderate Protection*	*Low Protection*
Visual	**V-1.** Manage the area to meet Visual Resource Management Class I objectives to preserve the existing character of the landscape.	**V-4.** Manage the area to meet Visual Resource Management Class II objectives.	**V-4.** Manage the area to meet Visual Resource Management Class II objectives.
Wildlife	**W-7.** Allow no loss or degradation of fish habitat and associated watershed that would cause a negative impact to Colorado River cutthroat trout population numbers. **W-8.** Allow no new long-term (greater than two growing seasons) ground-disturbing activities that would result in erosion and measurable sedimentation into occupied streams. **W-9.** Allow no activities that would result in streambank disturbance to more than 10% of the reaches contained within the ACEC.	**W-7.** Allow no loss or degradation of fish habitat that would cause a negative impact to Colorado River cutthroat trout population numbers. **W-9.** Allow no activities that would result in streambank disturbance to more than 10% of the reaches contained within the ACEC. **W-10.** Allow no new long-term (greater than two growing seasons) ground-disturbing activities within those portions of Colorado River cutthroat habitat designated as high or moderate risk. **W-11.** Locate allowed ground-disturbing activities in areas with the least potential for erosion in the remainder of the ACEC located outside areas designated high or moderate risk.	**W-7.** Allow no loss or degradation of fish habitat that would cause a negative impact to Colorado River cutthroat trout population numbers. **W-11.** Locate allowed ground-disturbing activities in areas with the least potential for erosion in the remainder of the ACEC located outside areas designated high or moderate risk. **W-12.** Allow no new long-term (greater than two growing seasons) ground-disturbing activities within portions of Colorado River cutthroat trout habitat designated as high risk.
Botanical/ Ecological	**P-13.** Allow no ground-disturbing activities within areas designated as high or moderate risk for rare plants or significant plant communities. **P-14.** Allow no activities that would disturb, alter, or interrupt the hydrologic regime within the hydrological processes areas that support rare plant species or significant plant communities (designated as high or moderate risk). **P-2.** Revegetate any allowed surface disturbance using locally adapted native species. **P-3.** Allow natural ecosystem processes such as rockslides to continue. Control wildfire only when human safety or property is at risk.	**P-15.** Allow no ground-disturbing activities in areas designated as high risk for rare plants or significant plant communities. Minimize disturbance in moderate risk areas through relocation of disturbances and mitigation. **P-16.** Locate ground-disturbing activities in areas with the least potential for erosion or other disturbances to rare plants or significant plant communities in the remainder of the ACEC located outside of designated high or moderate risk areas. **P-17.** Relocate and mitigate activities that would disturb, alter, or interrupt the hydrologic regime within the watershed areas that support	**P-10.** Allow no ground-disturbing activities that would result in a direct or indirect affect or disturbance to rare plants species or significant plant communities. **P-2.** Revegetate any allowed surface disturbance using locally adapted native species. **P-17.** Relocate and mitigate activities that would disturb, alter, or interrupt the hydrologic regime within the watershed areas that support rare plant species or significant plant communities (designated as high or moderate risk).

	P-4. Where practicable, restore to a naturally functioning state any existing human-caused disturbance that is impairing natural ecosystem processes affecting habitat for rare plant species or significant plant communities. **P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have no detrimental impact on long-term survival and reproduction of rare plant species or significant plant communities. **P-6.** Control noxious weeds using integrated control techniques. Limit weed control in rare plant populations or significant plant communities to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO, 1997). **P-13.** Maintain the significant riparian plant communities in mid-to-late seral stage to maintain the current ecological values.	rare plant species or significant plant communities (designated as high or moderate risk). **P-2.** Revegetate any allowed surface disturbance using locally adapted native species. **P-3.** Allow natural ecosystem processes such as rockslides to continue. Control wildfire only when human safety or property is at risk. **P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have no detrimental impact on long-term survival and reproduction of rare plant species or significant plant communities. **P-6.** Control noxious weeds using integrated control techniques. Limit chemical weed control within rare plant populations or significant plant communities to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO, 1997).	**P-5.** Prohibit collection of plants, plant materials, and seeds, except for scientific or research purposes. Such collection must have no detrimental impact on long-term survival and reproduction of rare plant species or significant plant communities. **P-6.** Control noxious weeds using integrated control techniques. Limit chemical weed control within rare plant populations or significant plant communities to spot applications to avoid damage to non-target species. **P-7.** Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the *Colorado Livestock Grazing Management Guidelines* (BLM, CSO, 1997).



Map 1

Proposed Anvil Points ACEC Boundary and Values

- Highways
- Proposed Anvil Points ACEC Boundary

Land Status:

- BLM
- Federal Subsurface
- PRI

Relevant and Important Values:

Visual Resources

- High or Very High Visual Sensitivity

Geologic Resources

- Cave Resources

Wildlife

- Unroaded Wildlife Habitat
- Potential Nesting Habitat
- Red-tailed Hawk Nest Sites
- Golden Eagle Nest Sites
- Peregrine Falcon Nest Sites

Sensitive Plants and Communities

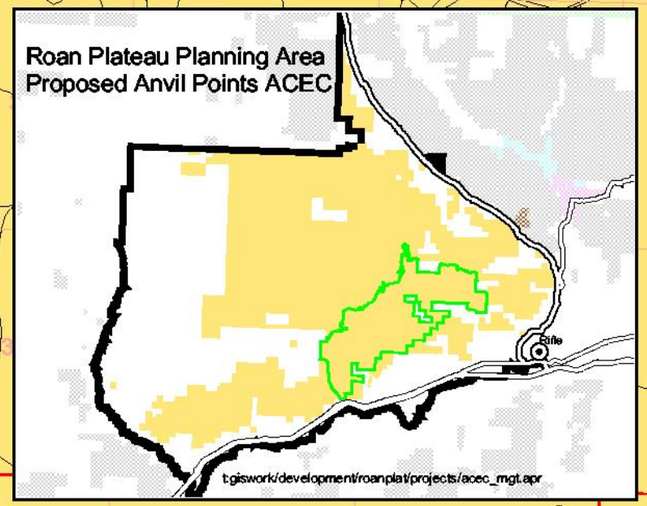
- Occupied/Potential Habitat and Ecosystem Processes for Rare Plants
- DeBeque Milkvetch
- Southwest Stickleaf
- Parachute Penstemon
- DeBeque Phacelia
- Mtn. Sage/Basin Wildrye
- Aspen/Rocky Mtn. Maple
- Beardless Bluebunch Wheatgrass
- Utah Fescue
- Beardless Bluebunch Wheat/ Sandberg Bluegrass

N

0.6 0 0.6 1.2 Miles

Map Scale 1:40,000

Map 2



Proposed Anvil Points ACEC Boundary and Existing Oil & Gas Leases

Highways
Motorized Routes on Public Lands
Proposed Anvil Points ACEC Boundary
High or Very High Visual Sensitivity

Land Status
BLM
PRI
Federal Subsurface
Exisiting Oil and Gas Leases

N

0.4 0 0.4 0.8 Miles

Map Scale 1:40,000

Proposed Magpie Gulch ACEC Boundary and Values

- Highways
- Motorized Routes on Public Lands
- Proposed Magpie Gulch ACEC Boundary

Land Status
- BLM
- DOE
- PRI
- STA
- Federal Subsurface
- Existing Oil and Gas Leases

Relevant and Important Values:

Visual Resources
- High or Very High Visual Sensitivity

Sensitive Plant Community
- Old Growth Douglas-fir

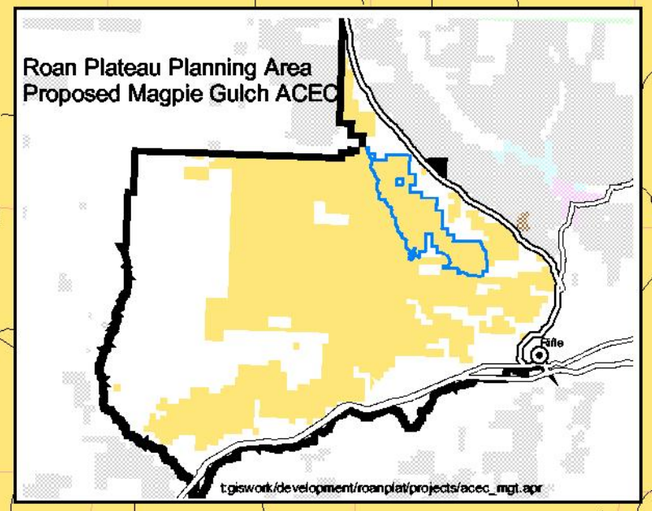
Wildlife
- Unroaded Wildlife Habitat
- Red-tailed Hawk Nest Sites

N

0.4 0 0.4 0.8 Miles

Map Scale 1:37,500

Roan Plateau Planning Area
Proposed Magpie Gulch ACEC



Map 3

Map 4

Proposed East Fork ACEC Boundary and Values

Motorized Routes on Public Lands

Proposed East Fork ACEC Boundary

Land Status

BLM

Federal Subsurface

PRI

Relevant and Important Values:

Visual

High or Very High Visual Sensitivity

Wildlife

High Risk Ecological Values for Fish & Plant Communities

Moderate Risk Ecological Values for Fish and Plant Communities

High Value Watershed Processes for Fisheries and Plant Communities

Colorado River Cutthroat Trout

Sensitive Plants and Communities

Hanging Garden Sullivantia

Utah Fescue

Southwest Stickleaf

Blue Spruce/Red-osier Dogwood

Boxelder/Cottonwood/Red-osier Dogwood

Indain Ricegrass/Shale Barren Slopes

N

0.4 0 0.4 0.8 Miles

Map Scale 1:37,500

Roan Plateau Planning Area
Proposed East Fork ACEC

Rifle

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Proposed Trapper Creek ACEC Boundary and Values

Motorized Routes on Public Lands

Proposed Trapper Creek ACEC Boundary

Land Status

- BLM
- PRI
- Federal Subsurface
- Existing Oil and Gas Leases

N

Relevant and Important Values:

Visual Resources

- High or Very High Visual Sensitivity

Wildlife

- High Risk Ecological Values for Fish & Plant Communities
- Moderate Risk Ecological Values for Fish and Plant Communities
- High Value Watershed Processes for Fisheries and Plant Communities
- Colorado River Cutthroat Trout
- Red-tailed Hawk Nest Sites

Sensitive Plants and Communities

- Utah Fescue
- Hanging Garden Sullivantia
- Sagebrush/Thurber Fescue

0.4 0 0.4 0.8 Miles

Map Scale 1:37,500

Map 5

Roan Plateau Planning Area
Proposed Trapper Creek ACEC

Parachute

t:giswork/development/roanplat/projects/acec_mgt.apr

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Appendix A

Visual Resource Classes and Objectives

Class I Objective

The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

Class II Objective

The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III Objective

The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV Objective

The objective of this class is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Appendix B

Colorado Natural Heritage Program
Nature Conservancy Natural Heritage Ranks

Mission

The Colorado Natural Heritage Program (CNHP) is part of an international network of conservation data centers that compile comprehensive information on rare, threatened, and endangered species and natural communities in the U.S., Canada, and many Latin American countries. A multi-disciplinary team of scientists and information managers gather information and incorporate it into continually updated databases. By concentrating on site-specific data for significant elements of natural diversity, CNHP accurately details the status and distribution of each species or community. Each of these significant natural features (species and community types) is an element of natural diversity or simply an "element."

Element Ranking Criteria

The Natural Heritage Program assigns a rank to each element that indicates its relative imperilment on a five-point scale (Table A-1). Each species and natural community is ranked for its global and local distribution and rarity. By using the element ranks and the quality of each occurrence, priorities can be established for the protection of the most sensitive or imperiled sites. These ranks are also used to assign biodiversity ranks (Table A-2) for assessing potential conservation areas.

The primary criterion for determining element ranks are: 1) the number of known distinct localities or occurrences and; 2) the total number of individuals at each location. Other factors considered in ranking elements are the species' biology, population trends, and known threats. These ranks are assigned both in terms of the element's rarity or imperilment over its entire range (Global or G-rank) and within the sites of Colorado (State or S-rank) (Table 1). Together these two ranks give an instant picture of the imperilment of the element. *Although most species protected under state or Federal endangered species laws are critically imperiled, not all imperiled species are listed as endangered or threatened* (CNHP 1997).

Table A-1
Colorado Natural Heritage Program Element Rarity Ranks

Rarity Rank	Definition/Description
G/S1	Critically imperiled; usually five or fewer occurrences; or may be a few remaining individuals; often especially vulnerable to extinction or extirpation.
G/S2	Imperiled; usually between five and 20 occurrences; or with many individuals in fewer occurrences; often susceptible to becoming endangered.
G/S3	Vulnerable; usually between 20 and 100 occurrences, may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
G/S4	Common; usually more than 100 occurrences, but may be fewer with many large populations; may be restricted to only a portion of the state; usually not susceptible to immediate threats.
G/S5	Very common; demonstrably secure under present conditions.
GU/SU	Unable to assign rank due to lack of available information.
G?/S?	Indicates uncertainty about assigned rank
Global rarity ranks (G) refer to the rarity of a species throughout its range; state rarity ranks (S) refer to rarity throughout the state.	

Table A-2
Colorado Natural Heritage Program Biodiversity Ranks for Assessing Potential Conservation Areas

Biodiversity Rank	Definition/Description
B1	**Outstanding Significance:** the only site known for an element or an excellent occurrence of a G1 species.
B2	**Very High Significance:** one of the best examples of a community type, good occurrence of a G1 species, or excellent occurrence of a G2 or G3 species.
B3	**High Significance:** excellent example of any community type, good occurrence of a G3 species, or a large concentration of good occurrences of state rare species.
B4	**Moderate Significance:** good example of a community type, excellent or good occurrence of state-rare species.
B5	**General Biodiversity Significance:** good or marginal occurrence of a community type, S1 or S2 species.